# *QATAR*

# COUNTRY PROFILE

IMPLEMENTATION OF AGENDA 21:
REVIEW OF PROGRESS MADE SINCE THE
UNITED NATIONS CONFERENCE ON
ENVIRONMENT AND DEVELOPMENT, 1992

**Information Provided by the Government of Qatar to the United Nations Commission on Sustainable Development**
**Fifth Session**
**7-25 April 1997**
**New York**

*United Nations Department for Policy Coordination and Sustainable Development*
*Division for Sustainable Development*
*The Information contained in this Country Profile is also available on the World Wide Web, as follows:*
***http://www.un.org/dpcsd/earthsummit***

E/CN.17/1997/MISC.87

97-23414

# *QATAR*

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*Note from the Secretariat: An effort has been made to present all country profiles within a common format, with an equal number of pages. However, where Governments have not provided information for the tables appended to Chapters 4 and 17, those tables have been omitted entirely in order to reduce the overall length of the profile and save paper. Consequently, there may be some minor inconsistencies among the formats of the different country profiles.*

*All statistics are rendered as provided by the respective Governments.*

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## ACRONYMS

| | |
|---|---|
| APELL | Awareness and Preparedness for Emergencies at Local Level |
| CFC | chlorofluorocarbon |
| CGIAR | Consultative Group on International Agriculture Research |
| CILSS | Permanent Inter-State Committee on Drought Control in the Sahel |
| EEZ | exclusive economic zone |
| ECA | Economic Commission for Africa |
| ECE | Economic Commission for Europe |
| ECLAC | Economic Commission for Latin America and the Caribbean |
| ELCI | Environmental Liaison Centre International |
| EMINWA | environmentally sound management of inland water |
| ESCAP | Economic and Social Commission for Asia and the Pacific |
| ESCWA | Economic and Social Commission for Western Asia |
| FAO | Food and Agriculture Organization of the United Nations |
| GATT | General Agreement on Tariffs and Trade |
| GAW | Global Atmosphere Watch (WMO) |
| GEF | Global Environment Facility |
| GEMS | Global Environmental Monitoring System (UNEP) |
| GEMS/WATER | Global Water Quality Monitoring Programme |
| GESAMP | Joint Group of Experts on the Scientific Aspects of Marine Pollution |
| GIPME | Global Investigation of Pollution in Marine Environment (UNESCO) |
| GIS | Geographical Information System |
| GLOBE | Global Legislators Organisation for a Balanced Environment |
| GOS | Global Observing System (WMO/WWW) |
| GRID | Global Resource Information Database |
| GSP | generalized system of preferences |
| HIV | human immunodeficiency virus |
| IAEA | International Atomic Energy Agency |
| IAP-WASAD | International Action Programme on Water and Sustainable Agricultural Development |
| IARC | International Agency for Research on Cancer |
| IBSRAM | International Board of Soil Resources and Management |
| ICCA | International Council of Chemical Associations |
| ICES | International Council for the Exploration of the Sea |
| ICPIC | International Cleaner Production Information Clearing House |
| ICSC | International Civil Service Commission |
| ICSU | International Council of Scientific Unions |
| IEEA | Integrated environmental and economic accounting |
| IFAD | International Fund for Agricultural Development |
| IGADD | Intergovernmental Authority for Drought and Development |
| IGBP | International Geosphere-Biosphere Programme (ICSU) |
| IGBP/START | International Geosphere-Biosphere Programme/Global Change System for Analysis, Research and Training |
| ILO | International Labour Organisation |
| IMF | International Monetary Fund |
| IMO | International Maritime Organization |
| INFOTERRA | International Environment Information system (UNEP) |
| IOC | Intergovernmental Oceanographic Commission |
| IPCC | Intergovernmental Panel on Climate Change |
| IPCS | International Programme on Chemical Safety |
| IPM | integrated pest management |
| IRPTC | International Register of Potentially Toxic Chemicals |
| ITC | International Tin Council |
| ITTO | International Tropical Timber Organization |

## ACRONYMS (Cont'd)

| | |
|---|---|
| IUCN | International Union for Conservation of Nature and Natural Resources |
| MARPOL | International Convention for the Prevention of Pollution from Ships |
| OECD | Organisation for Economic Cooperation and Development |
| PGRFA | plant genetic resources for agriculture |
| PIC | prior informed consent procedure |
| SADCC | South African Development Co-ordination Conference |
| SARD | sustainable agriculture and rural development |
| UNCTAD | United Nations Conference on Trade and Development |
| UNDP | United Nations Development Programme |
| UNDRO | Office of the United Nations Disaster Relief Coordinator |
| UNEP | United Nations Environment Programme |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| UNFPA | United Nations Population Fund |
| UNICEF | United Nations Children's Fund |
| UNIDO | United Nations Industrial Development Organization |
| UNU | United Nations University |
| WCP | World Climate Programme (WMO/UNEP/ICSU/UNESCO) |
| WFC | World Food Council |
| WHO | World Health Organization |
| WMO | World Meteorological Organization |
| WWF | World Wide Fund for Nature (also called World Wildlife Fund) |
| WWW | World Weather Watch (WMO) |

## OVERVIEW

Qatar is an independent sovereign Arab state with a population of about 650,000. Arabic is the official language, although English is widely spoken by the Arab, European and Asian communities who reside and work in Qatar.

Doha where 80% of the population live, is the capital and administrative center of the country. It lies on the eastern coast and houses the ministries, government departments, and financial and commercial institutions. Other major towns in Qatar are Umm Said (the industrial town), Dukhan, Al-Khor and Al-Shamal.

The Qatari economy is, to a very large extent dependent on income derived from the exploitation of oil, natural gas and subsidiary industry, which accounts for more than 90 percent of annual exports. The government has actively promoted the development of both heavy and light industry concentrating on in-country resources. Cheap energy has led to the development of a steel and iron industry, and healthy gas reserves have led to the establishment of chemical, fertilizer, and petrochemical industries. Cement is also produced in Qatar.

Oil has played a significant role in Qatar's economy accounting for about 85% of export earnings and 75% of government revenues. Currently, Qatar has oil reserves of about 3.3 billion barrels and also has the third largest reserves of liquefied natural gas (LNG) in the world, and according to a report by the international energy consultant firm Gaffney, Cline & Associates, possesses 30% of the world's proven gas reserves, but accounts for only 5% of the global consumption.

In the agriculture sector, the country is self-sufficient for 70% of its summer vegetables and 40% of winter vegetables There is some production of grains, eggs and poultry, however, the country is still dependent on food imports. The government has made an effort to strengthen the agricultural sector offering several incentives to investors. Qatar has 28,000 hectares of arable land. The government has also placed increased emphasis on the fishing industry.

### Geographic and environmental factors

Qatar is located half way along the western coast of the Arabian Gulf falling approximately between the Latitudes 24 30' S and 26 34' N and the Longitude 50 40' W and 52 45' E. Qatar is a peninsula that extends northward covering an area of 11,437 sqkm. It includes a number of islands in the coastal waters of the peninsula. Hawar Archipelago, Halul and Al Bashiria are the most well known among these. The peninsula is approximately 165 km in length and 80 km in width, surrounded by the Persian Gulf from north and east, and by the Gulf of Bahrain from the west. The Kingdom of Saudi Arabia and the United Arab Emirates form the south-eastern border of the country. The total coastline including the islands is over 700 km (approximately 23% of the total Gulf coastline). The shoreline of the mainland is irregular and has many bays, which are called locally 'Khawr'; this is an Arabic term used for a small elongated bay such as Khawr Al Udeeid, Al khawr, etc. There are also many Spikes (Ras in Arabic) which result from erosion and are particularly numerous, like Ras Laffan, Ras Abu Aboud, Ras Rakan, Ras Ashrij, etc. The land is stony and largely barren, and the climate is hot and arid. Humidity is high during the summer (May to October), and the average annual rainfall is around 75mm.

### Seas around Qatar

The total area of Qatar's sea waters is approximately 35,000 sqkm (approximately 15% of the Gulf, which is approximately 240,000 sqkm). Qatar has an extremely shallow sea with an average depth of 30 m to the North and East of the peninsula (where the deepest water lies south and east of Halul island), towards the western side of the peninsula the (Gulf of Salwa) the average depth is only 20 meters.

The sea bottom sediments near Qatar's coastline are mainly hard sands, rocks and coral reefs. In the productive shallows, coral reefs are common on hard substrate and grass beds are widespread on soft bottoms. The Qatar space images from Landsat 1 indicates that the sandy bottom is spread over about 45% of Qatar's sea bed and approximately the same extent is covered by a mixture of mud and sand, whereas 10 % is covered by corals.

## OVERVIEW (Cont'd)

### Hydrographical and Hydrobiological features of the Sea around Qatar

Sea State

The wave height is an indication for the meteorologists to evaluate the sea state. Around Qatar the wave in the inshore water is generally around 1 foot, occasionally rising to 5 ft. In the offshore waters it is frequently between 1-4 ft. But the occurrence of 'Shamal' wind contributes to rough seas and wave height may reach as high as 14 to 15 ft. Seas are described as smooth or slight when the wave height is 4 ft. or less, moderate between 5 to 8 ft. and rough over 8 ft.

Currents

The currents around Qatar are variable but rarely exceeds 1 knot for most of the year. Many factors have an indirect effect on these currents. In winter, the strong prevailing 'Shamal' winds turn the waters causing a little difference between surface and bottom water temperatures. In summer due to the high rate of evaporation and consequently the high salinity, the heavy salty Gulf water flows out through the bottom of the Strait of Hormuz. This is compensated by an inward surface flow of lighter and less saline Indian Ocean water and causes a predominantly westerly flow through the Strait of Hormuz during most months of the year and westerly flow along the northern shores of the Gulf, because of this feature, the current flow along the coast of Qatar flows anticlockwise. The monsoon winds of the Arabian sea have no direct effect on the currents of the Gulf.

Temperature and Salinity

Around winter the air temperatures average a daily maximum of 10°C, causing the sea temperature to fall to 15°C and even lower in the shallows. During summer, air temperatures rise to an average daily maximum of 45°C and the sea temperature reaches 35°C in August.

The high evaporation of the water especially in summer, the very low rainfall, and the little fresh water inflow from the land are the main factors which produce very high sea water salinity. The salinity within Qatar's waters varies mainly between 39 ppt and 41 ppt at the surface. At the bottom, close to the offshore boundaries salinity tends to be 1 - 2 ppt higher than that at the surface. Higher salinity water are found off the south-east coast with over 60 ppt inside the Khawr Al Udayd. Salinity are high throughout the Gulf of Salwa (western side of Qatar) ranging from about 55 ppt at the entrance to the Gulf to upwards of 70 ppt at its southern extremity.

Plankton

Biological production is considered relatively high in the waters of the Gulf. The plankton biomass in the northern, eastern, and south-eastern parts of Qatari waters were estimated as 500-100 mg/cu. m., 200-500mg/cu. m. and 150-200 mg/cu. m. respectively. These quantities indicate the high productivity of the water around Qatar.

Oxygen

The dissolved oxygen in the sea water is the most important factor for the life, breathing, growth and flourishing of aquatic organisms. The dissolved oxygen in Qatar's waters is found to be 6.5 mg/l (average) for most of the year. This is considered to be relatively high in eastern and northern areas around the peninsula. In summer dissolved oxygen decreases due to the high temperature and salinity.

Tides

Around Qatar, tidal variation is in the range of 1.6 m and results in the exposure of large stretches of tidal flats around the peninsula. Frequent occurrence of tidal anomalies, in comparison to the predictions in the tidal chart have also been reported. The Gulf of Salwa is protected from wave action not only by its orientation, but also by the stretch of extremely shallow water lying between Saudi Arabia and Bahrain. These shallows form a barrier to tidal water movements, and the tidal amplitude within the Gulf of Salwa is much reduced.

**FACT SHEET**

**NAME OF COUNTRY:**

**1. Name of Key National Sustainable Development Coordination Mechanism(s)/Council(s).**

**Contact point (Name, Title, Office):**

**Telephone:** **Fax:** **e-mail:**

**Mailing address:**

**2. Membership/Composition/Chairperson:**

**2a. List of ministries and agencies involved:**

**2b. Names of para-statal bodies and institutions involved, as well as participating of academic and private sector bodies:**

**2c. Names of non-governmental organizations involved:**

**3. Mandate role of above mechanism/council:**

**4. If available, attach a diagram (organization chart) showing national coordination structure and linkages between ministries:**

QATAR

**AGENDA 21 CHAPTER 2:** **INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC POLICIES (with special emphasis on TRADE)**

| **NATIONAL PRIORITY:** | |
|---|---|
| **STATUS REPORT:** No information available. | |

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information available.

2. **Capacity-Building/Technology Issues:** No information available.

3. **Major Groups:** No information available.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** No information available.

**AGENDA 21 CHAPTER 3: COMBATING POVERTY**

**NATIONAL PRIORITY:**

**STATUS REPORT:** No information available.

- Focus of national strategy

- Highlight activities aimed at the poor and linkages to the environment

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information available.

2. **Capacity-Building/Technology Issues:** No information available.

3. **Major Groups:** No information available.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** No information available.

## STATISTICAL DATA/INDICATORS

| | 1985 | 1990 | 1992 | Latest 199_ | |
|---|---|---|---|---|---|
| Unemployment (%) | | | | | |
| Population living in absolute poverty | | | | | |
| Public spending on social sector % | | | | | |
| Other data | | | | | |

## AGENDA 21 CHAPTER 4: CHANGING CONSUMPTION PATTERNS

**NATIONAL PRIORITY:**

**STATUS REPORT:** No information available.

- **National policy objectives/focus**

- **National targets**

**Cross-Sectoral Issues**

1. **Decision-Making Structure:** No information available.

2. **Capacity-Building/Technology Issues:** No information available.

3. **Major Groups:** No information available.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** No information available.

**STATISTICAL DATA/INDICATORS**

| | 1985 | 1990 | 1992 | Latest 199_ | |
|---|---|---|---|---|---|
| GDP per capita (current US$) | | | | | |
| Real GDP growth (%) | | | | | |
| Annual energy consumption per capita (Kg. of oil equivalent per capita) | | | | | |
| Motor vehicles in use per 1000 inhabitants | | | | | |
| Other data | | | | | |

## AGENDA 21 CHAPTER 5: DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY

| NATIONAL PRIORITY: | |
|---|---|
| **STATUS REPORT:** No information available. | |

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information available.

2. **Capacity-Building/Technology Issues:** No information available.

3. **Major Groups:** No information available.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** No information available.

## STATISTICAL DATA/INDICATORS

| | 1990 | 1993 | Latest 199_ | |
|---|---|---|---|---|
| Population (Thousands) mid-year estimates | | | | |
| Annual rate of increase (1990-1993) | | | | |
| Surface area ($Km^2$) | | | | |
| Population density (people/$Km^2$) | | | | |
| Other data | | | | |

## AGENDA 21 CHAPTER 6: PROTECTING AND PROMOTING HUMAN HEALTH

**NATIONAL PRIORITY:**

**STATUS REPORT:** Health care services in Qatar are provided mainly through the Ministry of Public Health and Hamad Medical Corporation in cooperation with other Ministries, health care associations (e.g. Red Crescent, Qatar Diabetic Association, etc.), health clinics operated by some public sector and government agencies (police, army, industries) and privately operated health clinics. Major industries in Qatar which employ a relatively large number of personnel provide health care services for employees.

Basic health care in Qatar is provided free of charge to all residents including expatriates. However, a nominal fee for annual registration and for prescribed medicines has been introduced recently for non Gulf Co-operation Council persons to decrease misuse and overburden on the health care system. However, essential services such as emergencies, well baby and maternal care, school health care, vaccinations against communicable diseases etc. have been exempted from these charges.

The Master Plan Update (update for the health care master plan prepared by the Ministry of Public Health and Hamad Medical Corporation, 1994) noted that the health care system in Qatar was modeled on the Danish system, with strong focus on community-based local health services providing primary health care. The Master Plan noted that the system for primary health care centres was designed with catchment area populations averaging 11,000 persons. In addition, one of the emerging trends and philosophies in hospital planning in Qatar has been, and is expected to be, decentralization of secondary health care services from centralized locations in Doha to suburban and rural health care centres. Currently, the catchment areas population for health centres outside Doha average between 5,000- 20,000 and the health care centres in Doha have catchment areas averaging over 35,000.

Monitoring of health programs is done through statistical analysis of data collected by different departments of the Ministry of Health, reports of short term WHO consultants, analysis of patients complaints and numbers of patients visit to health facilities in comparison to population. Available data show that some aspects of health services in Qatar are good and with good facilities.

Health education in schools runs through the school nurse, the school doctor who visits the school two or three times a year providing health services and health education, social worker in the school and from teachers. Also health and hygiene lessons are part of the curriculum in primary and preparatory levels of education. The primary health centres have social workers dedicated to providing health education.

The Preventive Health Department of the Ministry of Public Health provides for the following services for identifying and eradicating communicable diseases:

- Follow-up of vaccinations given at health centres to prevent out-break of communicable diseases.
- Follow-up of contacts with patients suffering from communicable diseases.
- Detecting disease carriers and checking newcomers to the country.
- Study of disease patterns in the country and epidemiological statistics.
- Issue of 'Communicable Disease-Free' License to food handlers and persons in contact with humans or animals.
- Providing vaccination to travellers to endemic countries, and vaccination to all inhabitants during epidemics in near-by countries.
- Ensuring quality of food and water.

<u>Challenges</u>

The following list summarizes issues and constraints facing the primary health care implementation:

- Since primary health care is provided almost free of charge there is a tendency to misuse the services.
- Lack of public awareness and health education.
- Lack of personnel for planning and follow-up.
- Shortage of trained staff.
- The diverse nature of the community served by the system which consists of people from different parts of the world.
- Lack of adequate co-operation between sectors involved in health services and health education.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No additional information.

2. **Capacity-Building/Technology Issues:** The current system for monitoring the progress and effectiveness of health services is inadequate. The methods used for collecting and analyzing information are not up-to-date. Also, communication between sectors providing health services is inadequate.

The constraints in health care education include the following:

- Inadequate training of health providers.
- Shortage of staff, mainly school nurses and doctors.
- Lack of health education in non-governmental schools through health professionals.
- Lack of a training section in the Ministry of Health.

The following list summarizes issues and constrains facing identification and eradication of communicable diseases:

- Inadequate communication between departments providing health services.
- Improper system of notification of communicable diseases.
- Responsibility of water and food safety is under care of many departments and in more than one ministry.
- A variety of disease pattern due to presence of persons from different parts of the world.
- Difficulty in searching for a source of a communicable disease due to traditional customs of the population.

Future and long term programmes

In order to resolve the aforementioned problems and constraints the following actions are under finalisation:

- Preparing a detailed and comprehensive 5-year health programme.
- Creation of a National Council for Health.
- Restructuring the Ministry of Health in order to maximize effective coordination and reduce bureaucracy.
- Conducting extensive short training programmes for intermediate and junior staff.
- Executing house care programs to establish links between the family and health care services.
- Establishing a modern database of health indicators.
- Training personnel and setting up a specialised unit for monitoring and follow-up.
- Exchanging experience in health education and training with other Gulf countries.
- Inviting experienced personnel in training and health education.
- Preparing training for different sectors of health providers.
- Running health education programmes about the importance of preventive and epidemiological medicine.

3. **Major Groups:** See information provided under STATUS.

4. **Finance:** See information provided under STATUS.

5. **Regional/International Cooperation:** No information available.

## STATISTICAL DATA/INDICATORS

| | 1980 | 1990 | Latest 199_ | |
|---|---|---|---|---|
| Life expectancy at birth | | | | |
| Infant mortality (per 1000 live births) | | | | |
| Maternal mortality rate (per 100000 live births) | | | | |
| Access to safe drinking water (% of population) | | | | |
| Access to sanitation services (% of population) | | | | |
| Other data | | | | |

## AGENDA 21 CHAPTER 7: PROMOTING SUSTAINABLE HUMAN SETTLEMENT DEVELOPMENT

**NATIONAL PRIORITY:**

**STATUS REPORT:**
**Preparation of a National Human Settlements Plan**

Physical Development Plan

A physical development plan (PDP) of Qatar has been prepared based on an estimated population of 620,000 in 1995, and going up to 1,000,000 in 2020. The capital, Doha and its surrounding suburbs account for about 90% of the population of Qatar. The PDP policies cover the following critical areas:

- Water resources
- Sanitation facilities
- Coastal and marine environment
- Conservation of natural resources
- Impacts of development projects
- Coastal zone management

Integration of Environmental Dimensions in Human Settlements

Action on the following items have been taken:

- Enactment of legislation covering environmental issues
- Municipalities ensure general cleanliness, quality of food and water
- Environmental impact assessment for new development projects including those of power plants, high voltage substations and overhead lines.

Challenges

The main issues and constraints facing the implementation of plans and policies related to human settlements, distribution of population and the sustainable management of land resources are as follows:

- Lack of a comprehensive and coordinated physical development strategy that will identify character and direction of urban growth at national, regional, and settlement levels, as well as land use compatibility and impact of urban growth on physical environment.
- Absence of well-defined legislative framework that provides the planning agencies in Qatar with tools to effectively control and direct physical development
- Lack of proper utilization of existing planning and building regulations due to absence of legal backing and technical expertise
- Absence of well-defined regulations for protecting physical environment as well as procedures for assessing environmental impact.
- Inadequate coordination and interaction between agencies involved in physical, economic and utilities planning and infrastructure departments resulting in irrational utilization of economic and physical resources. This is reflected in improper phasing of implementation of projects for infrastructure and public facilities which in turn affects the quality of human settlements.

Following are some of the issues and constraints facing integration of environmental dimensions in human settlement:

- Rapid pace of physical development during the past few decades has created extensive demand on infrastructure and public facilities.
- Lack of adequate coordination and interaction between concerned agencies and departments, such as the Planning, Environment and Public Health.
- Lack of effective environmental standards and associated legislation for their implementation.
- Older districts have residential areas in poor condition inhabited by less affluent expatriate workers from less developed countries and these areas require redevelopment and rehabilitation.
- Inadequate number of trained personnel for implementation and monitoring.

**STATUS REPORT (cont'd):**

Future Programmes

The PDP has put forward a general physical planning framework for Qatar. There is, however, an urgent need for formulating plans dealing with specialized areas such as a national plan for protection of environment, a comprehensive housing program, a national strategy for industrial development, a national plan for waste management, water resources conservation and the protection of rural habitat.

Procedures and policies need to be established to ensure that the potable underground water supply is replenished and held as a strategic resource.

The Physical Development Plan for the State of Qatar (PDP) has put forward several recommendations for overcoming the negative impact caused by rapid pace of development and for providing infrastructure and facilities that match with the rate of growth to ensure high quality of the living environment.

Some of the recommendations to ensure a satisfactory environmental quality of the human settlement are as follows:

- Ensure coordination and information exchange between the concerned agencies.
- Enact effective environmental standards and associated legislation for their implementation.
- Prepare action plans for restoration of deteriorated areas with appropriate allocation of funds.
- Set up of a specialized unit for monitoring and recommending remedial action.

Their is a need to revise existing regulations to make them more effective in controlling the current rapid pace of physical development.

There is an urgent need to enact comprehensive building codes and planning laws that guide and control building and planning activities in urban areas. These legislation should be detailed enough to become effective tools for concerned government agencies.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** New constructions are required to take a building permit which has to be approved by the concerned Municipality, Planning Department and other service authorities including Electricity, Water and Civil Defence. A completion certificate is also required to ensure compliance with all regulations. Legislation on a number of issues has already been passed. The main ones are as follows:

- Law No. 4 - 1985 and its amendments, related to controlling buildings
- Ministerial Order No. 2 - 1989, related to precautions to be taken for public safety to avoid hazards from building construction.
- Ministerial Order No. 7 - 1989, related to technical and architectural specifications for buildings.
- Law No 3 - 1975 and its amendments, related to commercial, industrial and public buildings.
- Law No 8 - 1974 and its amendments, related to general cleanliness.
- Ministerial Order No 2 - 1989, related to the transport of debris, solid and liquid waste.

In addition to the above legislation, the Planning Department of the Ministry of Municipal Affairs and Agriculture has published several planning and building regulations under the existing law giving specifications for the main development types in urban areas. These include:

- Regulations for Flats and Flat Complexes (Draft)
- Regulations for Villa and Villa Complexes (Draft)
- Qatar Commercial Development Manual (Draft)
- Planning Regulations for Residential Developments in Al Rayyan Municipality
- Planning Regulations for Commercial Developments in Al Rayyan Municipality
- Subdivision Regulations
- Interim Zoning Regulation

The main constraints facing implementation of legislation and criteria regulating construction in urban areas can be summarized as follows:

- The existing legislation is not comprehensive. There are still several areas for which legislation need to be enacted.
- Lack of proper mechanisms for enforcement of existing legislation which includes lack of experienced personnel and funding.
- Many of the regulatory documents do not have legal status.

2. **Capacity-Building/Technology Issues:** See information provided under STATUS.

3. **Major Groups:** No information available.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** No information available.

## STATISTICAL DATA/INDICATORS

| | 1990 | 1995 | |
|---|---|---|---|
| Urban population in % of total population | | | |
| Annual rate of growth of urban population (%) | | | |
| Largest city population (in % of total population) | | | |
| Other data | | | |

## AGENDA 21 CHAPTER 8: INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING

(See pages vii and viii at the beginning of the profile)

**NATIONAL PRIORITY:**

**STATUS REPORT:**

Qatar ratified the United Nations Conference on Environment and Development (UNCED) along with the principles of Agenda 21. One of the principles calls for the commitment of the State to institutionalize environmental impact assessment for its new development projects.

There have been several international conventions within the past ten years. The signing of these conventions helps in promoting awareness of the people and shows the commitment of the Government towards managing the environment in the national, regional and global levels. Qatar has signed a number of such conventions and is implementing these through national and regional programmes. The Arab Declaration on Environment and Development, signed in September, 1991 in Cairo under the auspices of the Council of Arab Ministers Responsible for Environment (CAMRE) was a major step in implementing these conventions at regional levels. It also called for providing adequate finances in the budget for national issues through human resources development and related programmes.

It is now realized that developments in science and technology can cause a large number of environmental problems if they are applied to Qatar without taking appropriate precautionary measures. For instance earlier technology imported into the country paid little heed to water conservation through recycling. The water needs for agriculture and industry were made up by supplementing desalinated water with ground water. As a consequence ground water reserves have fallen to precarious levels.

With the objective of importing the appropriate technology, a policy has been laid down for environmental impact assessment of new industries and major infrastructure projects. A procedure for evaluation of projects has also been brought out. This seeks to incorporate environmental considerations at the early stage even when a project report is commissioned. The approved procedure for examination of the environmental impacts of development project requires a committee of experts in different aspects of environment, many of them drawn from Departments of the University and Government. Examination of projects would not only improve institutional linkages but also expose and train persons in environmental aspects of projects and the precautions that need to be taken during construction and operation.

## Cross-Sectoral Issues

1. **Decision-Making Structure (please also refer to the fact sheet):** No additional information.

2. **Capacity-Building/Technology Issues:** See information provided under STATUS.

3. **Major Groups:** No information available.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** See information provided under STATUS.

## AGENDA 21 CHAPTER 9: PROTECTION OF THE ATMOSPHERE

**NATIONAL PRIORITY:**

**STATUS REPORT:**

**The Montreal Protocol and its Amendments were ratified in 1996.**

**The United Nations Framework Convention on Climate Change was ratified in 1996.**

**Additional comments relevant to this chapter**

Specifications for air quality monitoring stations have been prepared and are awaiting for approval. These stations will be fixed at strategic sites to represent the impacts of the traffic movement and industrial installations. This will help assess the quality of air in the country.

A national report on Ozone Depleting Substances has been prepared. The national consumption of these substances is determined to be below 0.3 kg/ca/year and, thus Qatar is assessed to be an "Article Five country".

*Please refer also to the information provided under chapter 41.*

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information available.

2. **Capacity-Building/Technology Issues:** No information available.

3. **Major Groups:** No information available.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** No information available.

## STATISTICAL DATA/INDICATORS

| | 1980 | 1990 | Latest 199- | |
|---|---|---|---|---|
| $CO_2$ emissions (eq. million tons) | | | | |
| $SO_x$ * | | | | |
| $NO_x$ * | | | | |
| $CH_4$ * | | | | |
| Consumption of ozone depleting substances (Tons) | | | | |
| Expenditure on air pollution abatement in US$ equivalents (million) | | | | |
| Other data | | | | |

## AGENDA 21 CHAPTER 10: INTEGRATED APPROACH TO THE PLANNING AND MANAGEMENT OF LAND RESOURCES

| NATIONAL PRIORITY: | |
|---|---|
| **STATUS REPORT:** See information provided under Chapter 7. | |

**Cross-Sectoral Issues**

1. **Decision-Making Structure:** See information provided in Chapter 7.

2. **Capacity-Building/Technology Issues:** No information available.

3. **Major Groups:** No information available.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** No information available.

**AGENDA 21 CHAPTER 11: COMBATING DEFORESTATION**

| NATIONAL PRIORITY: | |
|---|---|
| **STATUS REPORT:** No information available. | |

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information available.

2. **Capacity-Building/Technology Issues:** No information available.

3. **Major Groups:** No information available.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** No information available.

## STATISTICAL DATA/INDICATORS

| | 1985 | 1990 | Latest 199- | |
|---|---|---|---|---|
| Forest Area ($Km^2$) | | | | |
| Protected forest area | | | | |
| Roundwood production (solid volume of roundwood without bark in mill $m^3$) | | | | |
| Deforestation rate ($Km^2$/annum) | | | | |
| Reforestation rate ($Km^2$/annum) | | | | |
| Other data | | | | |

**AGENDA 21 CHAPTER 12: MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT**

**NATIONAL PRIORITY:**

**STATUS REPORT:**

**The International Convention to Combat Desertification in Countries Experiencing Drought and/or Desertification Particularly in Africa has not been ratified.**

Qatar has an area of 11,437 square kilometres and lies in the middle of the Arabian Gulf in the dry desert zone. The average annual rainfall is 75.2 mm and the humidity varies between 45 and 95 percent. The main structural elements consist of sand dunes, Sabkhas, beach deposits and collovium depression ("rawda"). The surface is mostly dolomitic (limestone and marls) with some gypsum and anhydride beds in the lower parts. The landscape appears as a flat eroded land of low to moderate relief mainly ranging from 50 to 100 meters above sea level. All land in Qatar is desert or semi-desert.

Irrigated agriculture

All agriculture in Qatar requires perennial or complementary irrigation due to scanty rainfall. A land use scale for cultivation has been prepared. Grade 1 is cultivable land, Grade 2 is fairly cultivable, Grade 3 is marginally cultivable land until Grade 6 which is absolutely unsuitable.

Vegetative cover

The land is characterized by desert plant cover which can survive for long periods of up to tens of years. The total pastoral area is about 50,000 ha with a production of nearly 5,650 tons of dry material. These areas are largely rainfed. The plant groupings can be distinguished as:

a) Coastal subkha
b) Coastal area plants that grow in saline land
c) Roda: Samr (acacia tortilis), sidr (ziziphus mummularia) and awsaj (lycium showii)
d) Sand dunes group

**Causes of desertification**

Desertification factors in Qatar include the following:

Drop in ground water levels

The ground water reservoir has declined by 25 percent in the 12 years of a study period. In 1995, the total amount of water extracted for irrigation purpose amounted to 221 MCM. Most of the abstracted ground water is used on farms. A decrease in the available water for irrigation leads to deterioration and desertification of these farms.

Increasing salinity of ground water

Potable water is found at a depth ranging from 5 to 50 meters. The source of ground water is the Dammam Formation. The rate of abstraction is more than ten times the recharge. The quality of water has declined by 5 percent annually. An increase in the salinity is a result of sea water ingress and the flow of added salts (fertilizer) from the irrigation water to the ground water.

The salinity of the water in the southern parts of the country is higher than in the northern part. This has been successfully used in the irrigation of light textured soil.

Encroachment of sand on agricultural land

Sand dunes in Qatar cover about 1,500 square kilometres or about 13 percent of the area. Other sand formations cover 5 percent. The rate of movement of sand dunes in Qatar is about 8 km per year. Higher rates have been encountered in drier areas depending on the direction of the wind and the slope of the surface of the sand dunes. It has been estimated that 21,000 ha of agricultural and pastoral land has been lost due to wind desertification.

**STATUS REPORT (cont'd):**

Socioeconomic Factors

Exploitation of oil and gas reserves have brought about significant changes in demography. From 40,000 in 1960, the population went up to 280,000 in 1983 and to 504,000 in 1991. Also the increase was concentrated in the urban areas. The capital, Doha has encroached upon three principal agricultural areas, Rayyan, Sharaffa and Markabia.

**Steps taken to combat desertification**

A programme to combat desertification has been initiated. This has the interplay of Government bodies, local communities and land users. Already a large number of steps have been taken:

First is laying down legal procedures for agricultural development. The next steps consist of establishing experimental farms, made up of indigenous and imported species, and finally, fixing sand dunes through cultivation using irrigation methods that require much smaller quantities of water.

**The State's Action Plan**

The Present strategy to combat desertification is based on sustainable development and by building the nation's capacities. These include the following:

1) Taking precautionary measures for those lands which have not yet deteriorated or those that have only slightly deteriorated.
2) Promoting policies and strengthen institutional framework that encourage cooperation and facilitate access to information and appropriate technology
3) Strengthening climate forecasting facilities
4) Forging plans for drought emergency at the local, national, regional and subregional levels. These include sustainable income generation in drought-stricken areas.
5) Developing sustainable irrigation programmes for crops and cattle using non-conventional waters (potable, semi-potable and saline)
6) Setting up warehousing and marketing facilities for food in rural areas.
7) Providing appropriate technology and training in agriculture and pastoral activities in a way which is compatible with modern, social and economic circumstances.

**Future and long-term plans**

There are several areas which need to be investigated. Primarily these pertain to accurately mapping the present situation. This can be summarised a follows:

a) Compiling a desertification map of Qatar showing the degraded areas and also "rawdas" and other agriculturally promising lands.
b) Monitoring desertification through land degradation due to desert creep or salinity from decline of water quantity and quality
c) Surveillance of human behaviour in the vulnerable environment.
d) Enhancing the development of water resources, specially the recharge of ground water
e) Making laws that restrict overgrazing and prevent desertification of natural pastures.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** See information provided under STATUS.

2. **Capacity-Building/Technology Issues:** See information provided under STATUS.

3. **Major Groups:** No information available.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** No information available.

| STATISTICAL DATA/INDICATORS | | | | |
|---|---|---|---|---|
| | 1980 | 1990 | Latest 199_ | |
| Land affected by desertification ($Km^2$) | | | | |
| Other data | | | | |

## AGENDA 21 CHAPTER 13: MANAGING FRAGILE ECOSYSTEMS: SUSTAINABLE MOUNTAIN DEVELOPMENT

| NATIONAL PRIORITY: | |
|---|---|
| **STATUS REPORT:** Not applicable. | |

**Cross-Sectoral Issues**

1. **Decision-Making Structure:** Not applicable.

2. **Capacity-Building/Technology Issues:** Not applicable.

3. **Major Groups:** Not applicable.

4. **Finance:** Not applicable.

5. **Regional/International Cooperation:** Not applicable.

## AGENDA 21 CHAPTER 14: PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

**NATIONAL PRIORITY:**

**STATUS REPORT:**

Please refer to the information provided under Chapter 12.

**Cross-Sectoral Issues**

1. **Decision-Making Structure:** Please refer to the information provided under Chapter 12.

2. **Capacity-Building/Technology Issues:** Please refer to the information provided under Chapter 12.

3. **Major Groups:** Please refer to the information provided under Chapter 12.

4. **Finance:** Please refer to the information provided under Chapter 12.

5. **Regional/International Cooperation:** Please refer to the information provided under Chapter 12.

**STATISTICAL DATA/INDICATORS**

| | 1985 | 1990 | Latest 199_ | |
|---|---|---|---|---|
| Agricultural land ($Km^2$) | | | | |
| Agricultural land as % of total land area | | | | |
| Agricultural land per capita | | | | |
| | **1989/90** | **1992/93** | **Latest 199_** | |
| Consumption of fertilizers per $Km^2$ of agricultural land as of 1990 | | | | |
| Other data | | | | |

## AGENDA 21 CHAPTER 15: CONSERVATION OF BIOLOGICAL DIVERSITY

**NATIONAL PRIORITY:**

**STATUS REPORT:**

**The Convention on Biological Diversity was ratified in 1996. The Convention on International Trade in Endangered Species of Wild Fauna and Flora has not been ratified.**

Development of natural life and its conservation is a priority for the State. However, illegal fishing and hunting coupled with modern sporting weapons has a direct effect on the survival of the biodiversity. It, therefore, becomes necessary to create awareness amongst the citizens. This should be backed up with enforceable legislation.

**Achievements in the conservation of biodiversity**

A national committee consisting of representatives from concerned agencies was set up in the Environment Department. Their mandate was to list out the items and an action plan for implementation. The work pertaining to different aspects of conservation is being carried out through different agencies.

Marine Environment

Surveys of aquatic ecosystems have been carried out. These include the following:

- Biodiversity in the areas of natural and planted mangroves (avicennia morina) and sabkhas, 1996
- Locations and range of pearl oysters in Qatari waters.
- A preliminary study of the Arabian Gulf fish in the aftermath of oil spillage during the Gulf War, 1990.
- The state of fisheries in Qatar, 1980 to 1992

Relevant books by concerned agencies have been published:

- Qatar University, "Common species of fish in Qatari waters", 1982
- Department of Fisheries, "Qatar's Fish", 1983
- Qatar National Museum, "Qatar and the Sea", 1987

Some of the areas in which research is being carried out are as follows:

- Diversity of marine organisms in the environment of coral reefs in Qatari waters and the effect of organic compounds on these
- The effect of ban on catching shrimps on the restoration of their stocks
- A biological study of king fish

Plant Environment

A laboratory has been set up in the Department of Agricultural and Water Resources for the culture of plant tissues. The following jobs have been done:

- Reproduction of very high quality palm trees.
- Conserving natural and indigenous trees.
- Introducing species from places having a similar environment.

The results of the published research work cover following:

- Plant Environment in Qatar.
- Medicinal and toxic plants in Qatar.
- Agricultural development in Qatar.
- Sabkha plants.

355 plant varieties and 106 types of fungi have been identified. Research has been taken up on the following:

- Grazing plants in Qatar.
- Green cover in Haloul Island.

**STATUS REPORT (cont'd):**

Animals and reptiles:
A survey is being carried out of all types of reptiles, on land and water in Qatar. This includes turtles, lizards and snakes.

Natural Reserves
The State encourages private farms. There are 1,123 farms of which 40 belong to the Government. There are 4 natural reserves while there are 30 farms for breeding gazelles and ostriches. The main ones are in Al Shahhaniya, Ras Ashairij, Haloul Island, Khor Al-Adaid, Al Aaliya Island, Al Thakhira and Tribuk.
A project is under way for setting up 3 reserves aimed at breeding plants facing depletion. A reserve for gazelles is being planned in Maszhabiya.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** A number of regulations and decrees have been passed. Notable among these are the following:
- Law No. 12 of 1981 for regulating agriculture.
- Law No. 4 of 1983 for the use and conservation of marine resources, amended by decree No. 17 of 1993.
- Law No. 1 of 1983 for protection of animal health.

Emiri decrees have been issued calling for the protection of the marine environment from pollution. This includes pollution from ships and also from land-based sources.
Decree No. 55 of 16 November 1996 approved the Convention on Biodiversity such that it has the power of law.
Ministerial decisions have been taken to prevent the import of deseased plants and the conservation of marine resources. This includes the ban on shrimp harvesting.
Circulars and notices are also issued by the concerned Ministries from time to time. These cover trawling practices and the types of nets to be used so that non-commercial marine life is not affected.

2. **Capacity-Building/Technology Issues:** The Environment Department is new. There is a need to increase the staff and also have a network of experts in Qatar or the GCC who could help in the field.

Conservation of biodiversity is a multidisciplinary task. Cooperation at the international and regional levels is called for. It is very important for Qatar to conserve its plant, animal and marine population through education and awareness and by enforceable laws. It must have the necessary monitoring capabilities as well. The scientific back-up is very necessary. The priority items are as follows:
1. Surveying all local plants and animals and establishing a data bank.
2. Following-up and caring for the species endangered with extinction.
3. Helping in preparing workshops and meetings on biodiversity and publishing the economic data and information as an added value to biodiversity.
4. Surveying the areas targeted for conservation and specifying the programmes for their development, and administration in the appropriate manner.
5. Supporting scientific research for the improvement of genetic features.
6. Setting the work priorities of the uses of bio-technology in Qatar, and specifying the possible joint projects in this field.
7. Establishing a "gene bank" for the conservation of local species and types.
8. Preparing the outlines for using genetic engineering, its products, and investigating its effects on health and environment.
9. Preparing additional legislation, where required, for conservation of biodiversity.

**Cross-Sectoral Issues (cont'd)**

**3. Major Groups:** No information available.

**4. Finance:** There is a need for greater funds for taking up studies and also hiring competent specialized staff.

**5. Regional/International Cooperation:** There is a need to have regional cooperation on many aspects regarding marine biota, the effects of marine pollution and illegal fishing. A greater degree of cooperation requires to be fostered amongst GCC countries.

| STATISTICAL DATA/INDICATORS | | | |
|---|---|---|---|
| | 1992 | Latest 199_ | |
| Protected area as % of total land area | | | |
| | 1990 | Latest 199_ | |
| Number of threatened species | | | |
| Other data | | | |

## AGENDA 21 CHAPTER 16: ENVIRONMENTALLY SOUND MANAGEMENT OF BIOTECHNOLOGY

| NATIONAL PRIORITY: | |
|---|---|
| **STATUS REPORT:** No information available. | |

## Cross-Sectoral Issues

1. **Decision-Making Structure:** No information available.

2. **Capacity-Building/Technology Issues:** No information available.

3. **Major Groups:** No information available.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** No information available.

**AGENDA 21 CHAPTER 17: PROTECTION OF THE OCEANS, ALL KINDS OF SEAS, INCLUDING ENCLOSED AND SEMI-ENCLOSED SEAS, AND COASTAL AREAS AND THE PROTECTION, RATIONAL USE AND DEVELOPMENT OF THEIR LIVING RESOURCES**

**NATIONAL PRIORITY:**

**STATUS REPORT: The UN Convention on the Law of the Sea was signed in 1984.**

The State of Qatar is made up of the main peninsula. It also has a number of small islands. The coasts of the state, including the islands, extend for more than 700 km (approximately 23 percent of the coasts of the Gulf). The coasts have acute curves forming bays and capes such as Ras Laffan, Ras Rekn and Ras Ashirij. The State's coasts includes a number of environmentally sensitive areas, such as mangrove forests and coastal coral reefs. These form a natural environment for a number of living organisms which are a national natural wealth.

Marine environment in the Arabian Gulf is considered to be of special importance. It is an important source of food. In addition, desalinated sea water is the main source (almost the sole one) of drinking water in the country. Due to human activities on land, it is a natural consequence that the marine environment has been subjected to a number of cases of pollution which has resulted in an environmental imbalance. This has affected aquatic ecosystems. This is particularly true because of the negative effect of unplanned development on environment, in general, and marine environment, in particular.

The coastal waters of Qatar are polluted from a number of sources. These include untreated industrial effluent, garbage from indiscriminate disposal by visitors to the benches and human activities in port areas. Oil spills due to accidents in exploration and transport is still the biggest source of pollution of the coastal waters. The State has taken a multi-pronged action in this regard. The steps include the following:

1. Integrated administration and sustainable development of coastal areas.
2 Environmental monitoring of the marine environment.
3. Using marine resources at the upper seas and sustaining these resources
4. Protecting the marine environment found in the State
5. The treatment of critical aspects in marine environment administration including the effects of climate change
6. Strengthening coordination and cooperation on both regional and international levels.
7. Promoting sustainable development of small islands.

Challenges

A large number of pollutants are discharged into the coastal waters which is a source of drinking water. Some of the pollutants discharged could have a tendency for bioconcentration, while others could from toxic products due to the reaction with other pollutants present in sea water. Discharge of ballast and other wastes need to be prevented. Enforcement of laws, both regional and local, needs to be backed with a programme of environmental awareness and education.

Future and long-term plans

1. Build a proper structure for monitoring the status of the marine environment with an appropriate laboratory. It is necessary to integrate the existing GIS in monitoring and modelling studies.
2. A system of enforcement needs to be established. Deterrent fines and punishment would have to be enforced on wilful polluter of the marine environment.
3. Emergency preparedness to fight accidents needs to be established. This would have a plan and a proper coordination and training for the concerned personnel of the relevant departments and agencies, particularly the Coast Guard.
4. Laws concerning ships with segregated ballast and facilities at ports for accepting and treating wastes need to be established and enforced.
5. Marine reserves need to be mapped and areas which are ecologically sensitive need to be preserved. This would require monitoring and support of properly equipped and trained technical personnel.
6. A continuous education and awareness programme requires to be carried out. While a lot is currently being done by the Environment Department, it is necessary to network with other departments and agencies which have the expertise in the field. For instance, the Qatar National Museum can do significant support work through its section on marine environment. A long-term coordinated programme with identified responsibilities is required.

## Cross-Sectoral Issues

**1. Decision-Making Structure:** A number of State legislations have been issued to protect the marine environment. In addition the State is required to comply with regional conventions which it has ratified. A list of such legislation includes the following:

- Decree No. 55 of 1978 for approving Kuwait Regional Agreement of Cooperation for Protecting the Marine Environment from pollution, and the protocol of regional cooperation for combating pollution which results from the discharge of oil and other damaging substances.
- The resolution of the Council of Ministers, No. 4 of 1986 providing that the plans and projects of development shall be shown to the permanent committee for environment for approval.
- Decree No. 51 of 1988 for signing the international agreement concerned with the establishment of an international fund for compensations for damages resulting from oil pollution (Brussels 1971).
- Decree No. 52 of 1988 for Qatar signing the international agreement concerned with the right to intervene in cases of accidents which cause pollution or may cause oil pollution in the upper seas (Brussels 1969).
- Decree No. 53 of 1988 for Qatar signing the international charter of civil liability on damages from oil pollution (Brussels 1969 amended by the protocol of 1977).
- Decree No. 36 of 1989 for approving the protocol for marine environment protection from pollution which results from the continental shelf
- Decree No. 55 of 1992 for approving the protocol for marine environment protection from pollution which results from land sources
- The law No 4 of 1983, for the protection and the regulation of the use of marine resources in Qatar
- Ministerial decision of 1993 providing that no new licenses shall he issued for fishing trawlers
- The resolution No. 84 for the year 1993, of the Council of Ministers concerned with procedures and arrangements for the protection of fish in Qatari waters.
- The resolution No. 29 of 1994, of the council of Ministers which prohibits fishing through trawling.
- The Ministerial decision No. 31 of 1995 for the amendment of some of the provisions of law No. 4 of 1983 on the necessity of the protection of marine wealth and the prevention of damage to the natural environment
- Ministerial decision No. 34 for the year 1994 prohibiting the catching of shrimps for 2 years starting August 94 till 1996, extended for another two years.

**2. Capacity-Building/Technology Issues:** The Environment Department is presently under the Ministry of Municipal Affairs and Agriculture. It is a fledging department established by law in 1994. Infrastructural gaps exist in the Department. A study has been undertaken by a private consultant to identify the appropriate structure of the Environment Department. This study is expected to be completed by July, 1997. In order to function effectively in controlling marine pollution it is necessary to have the appropriate manpower, a sea-going vessel and a properly manned laboratory.

**3. Major Groups:** No information available.

**4. Finance:** No information available.

**5. Regional/International Cooperation:** See information provided under STATUS and DECISION-MAKING STRUCTURE.

| STATISTICAL DATA/INDICATORS | | | | |
|---|---|---|---|---|
| | 1980 | 1990 | Latest 199- | |
| Catches of marine species (metric tons) | | | | |
| Population in coastal areas | | | | |
| Population served by waste water treatment (% of country's total population) | | | | |
| Discharges of oil into coastal waters (metric tons) | | | | |
| Releases of phosphate into coastal waters (metric tons) | | | | |
| Releases of nitrate into coastal waters (metric tons) | | | | |
| Other data | | | | |

**AGENDA 21 CHAPTER 18: PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES: APPLICATION OF INTEGRATED APPROACHES TO THE DEVELOPMENT, MANAGEMENT AND USE OF WATER RESOURCES**

**NATIONAL PRIORITY:**

**STATUS REPORT:** Qatar lies within a torrid sub-region of the northern desert belt. It is characterized by scanty rainfall of 50 to 80 mm per annum. High temperature and high relative humidity are common in summer. The rainfall is confined the winter months, November to March. The rainfall, although scanty, is the only source of natural water replenishment while groundwater is the only natural source of water supply. There is a severe water resources deficit.

**Steps taken for water conservation and use.**

Assessment of ground water reserves

All fresh groundwater in Qatar originates from local rainfall, except for the confined, slightly brackish water near Abu Samra which is believed to have its source to the west, in Saudi Arabia.

The country's reserves of fresh groundwater are concentrated in the northern part, where the fresh water body has the form of a lens that floats on saline groundwater, that is saturating a lower part of the Umm er-Radhuma formation. Laterally, it is controlled by sea water intrusion in coastal areas. Most of the water occurs in the Rus formation and in the upper part of the Umm er-Radhuma formation. Fractures, vugs and solution channels provide the principal means for storage and groundwater movement in carbonate aquifer.

The lens in the central part of Northern Qatar is about 80 m thick and diminishes towards seashore. The fresh salt water interface was detected at 120 m depth. The lens has been heavily overexploited.

Sources and reserves of potable water

Since 1954 the use of desalination has increased so that all demands for domestic and industrial water supply for Doha and its surroundings are met by desalinated water. Annual production capacity for desalinated water is presently 126 MCM/yr. Desalination plants account for approximately 96 % of the total municipal (excluding irrigation) potable water production.

Water to the rural areas in the Northern Qatar, as well as to communities, is supplied by six well fields of 9,000 $m^3/d$ (2.5 MCM) of water annually.

The total available potable water storage in the country, in buffer reservoirs, ground tanks, elevated tanks, and water towers totals approximately 1.1 MCM. This represents approximately three days' supply based on average national consumption rate.

The total gross extraction of groundwater for irrigation purposes increased from about 44 MCM in 1972 to about 220 MCM in 1995. The abstraction for public supply increased from 4 MCM to 6 MCM in 1977 and then fell to 2.5 MCM at 1994 "which is met entirely from groundwater".

The existing policy is to supply potable water free of cost to the prime residence of all Qatari nationals.

**STATUS REPORT (cont'd):**

Agricultural water supply and possible impact.

The agricultural sector relies basically on irrigation and its development will require vast amounts of water and put further demands on an already highly depleted unrenewable natural water resources.

In Qatar the renewable water resources are now totally depleted. Such mining will continue to cause lowering of the water table, deterioration in water quality, upcoming of highly saline water from deeper aquifer and resulting in a greater water cost. Therefore owing to the limited available groundwater supplies in the country, the main emphasis has been on construction of desalination units.

The present strategy in Qatar is to use groundwater resources primarily for agriculture and develop alternative resources, through construction of desalination plants for potable water supply.

The groundwater will be reserved for agricultural production, and for domestic water supply in rural areas. For communities north of the country, short-term reliance is being placed on groundwater resources. Alternative options which are being considered for this area include the use of aquifer recharge, construction of desalination facilities, and construction of transmission lines from existing desalination facilities.

Considering the current trends for an everincreasing amount of groundwater exploitation, it is estimated that the remaining groundwater reserve will be deteriorated within 10 years. Consequently agriculture will be at a critical situation, facing a stringent shortage of adequate water for irrigation purposes.

**Action to stem the deterioration of ground water resources**

Previous works in early 1980 had suggested that artificial recharge of freshwater into the aquifer systems may be a possible solution to the prevailing water supply problems, in order to augment the diminishing groundwater reserves and control environmental deterioration caused by saltwater intrusion and soil degradation.

In order to overcome the aggravating water resources deterioration, the Government of Qatar launched several studies such as Hydro-agricultural Surveys (1971), Integrated Water and Land Use (1974), Water Resources and Agricultural Development (1981). Recommendations were focused on the remedial measures concerning the reduction of water abstraction for agricultural use. In view of the prevailing self-sufficiency in foodstuff's supply, the ad hoc recommendations failed to achieve its targets.

The Department of Agricultural and Water Resources carried out two studies in the field of water resources management and development during the 1992-1994 period. They are "Agricultural Project Utilizing Water from Iran" and "Study of Artificial Recharge of Groundwater in Northern Qatar". Both studies have been completed in 1994.

**Future and long-term plans**

There is now a realization, particularly after the Gulf War, for the need to maintain strategic groundwater reserves and also to restore the configuration of the lens to mitigate the effects of saline water intrusion and salination from irrigation recycling.

The accumulated groundwater deficit calculated during the period 1972-1995 reached 994 MCM, more than one third of the 1977 estimate of total groundwater reserves in the country (2,500 MCM). Consequently groundwater levels have dropped up to 0.5-1.10 m per year and the quality of water deteriorates due to sea water ingress and to the intrusion of saline water from deeper aquifers. The estimated safe yield of the aquifer, based on the calculated average natural recharge over the last 20 years, is of the order of 35 MCM/ yr. Given the limited supply of potable water in underground storage, there is insufficient capacity to supply national needs if desalination plants are not operative. Therefore underground potable water needs to be preserved and available as a national strategic resource.

Rapid deterioration of water quality has resulted in the abandonment of several farms located adjacent to the coastal strip due to the over-exploitation practices prevailing in the region, which has resulted in a severe environmental impact observed by a rapid soil degradation.

**STATUS REPORT (cont'd):**

It is required to prohibit new agricultural land use including licensing of existing unlicensed farms, unless the water to be used comes from other resources.
Agricultural production and the total area cultivated have grown steadily during the past few years, and put very serious stress on the available groundwater base. The government is aiming at lessening dependence upon oil and gas and focusing on the development of the agricultural sector in order to achieve large measure of self-sufficiency in basic foodstuffs. There is thus clearly a need to diversify the resources of income, taking into account its water resources and the projected water demand. The self-sufficiency concept should be revised on the basis of practical self-sufficiency to ensure sustainability.

In agriculture production Qatar is fairly self-sufficient, in dairy products (62.5%), eggs (61.2%) and vegetable production (42.0%). Other plants and animal products include: field crops, fruits and dates (19.9%), barley and bran fodder (18.5%), livestock and poultry (21.4%), and red meat (12.4 %). The total cultivated area is approximately 7,585 hectares which constitute three percent of Qatar's surface land. Qatar's desire for self-sufficiency in food production should be balanced against the loss of strategic groundwater resources and other environmental impacts.

To fulfill ad hoc strategic tasks a complex of studies and investigations should be carried out within the present context of seeking ways and means to manage the scarce groundwater resources of Qatar and to enhance the environmental considerations in all possible development alternatives. The application of aquifer storage and recovery techniques is a useful tool for almost all possible groundwater development alternatives in addition to possible storage recovery of surplus water of various sources.

In general terms the host country strategy is encouraging the diversification of its economy, focusing on agricultural development in order to achieve self-sufficiency in foodstuffs. Rationalization of existing water resources is a prerequisite to ensure sustainable socio-economic development, self-sufficiency in vegetables, development of orchards, development of fodder crops, promotion of water conservation and metering with progressive introduction of tariffs in the agricultural sector (demand management) and a legal provision to control drilling. This strategy implies utilization of desalinated sea water for domestic and industrial use, whereas ground water resources to be utilized in irrigation purposes. In order for the government to maintain the level of commitment to irrigated agriculture, and in the absence of any other source of water supply, they are looking for imported water from Iran to augment the remaining groundwater reserves through artificial recharge to combat and minimize the environmental impact on the deteriorating water quality caused by the salt water intrusion and soil degradation. It is believed that artificial recharge/aquifer storage recovery schemes are an effective tool in groundwater management.

At the time of project formulation, surplus water from desalination was considered a realistic possibility. Imported water from Iran is being negotiated and the Government has commissioned a study to test the feasibility of using this water for direct irrigation purposes. It is expected that $5m^3$/sec water would be delivered from Karun river.

Reclaimed water is generally used for irrigation, it may be also for aquifer recharge under certain conditions. This requires to be evaluated. Similarly, treated effluent from industries needs to be used for growing green belts in industrial areas. This would help in stemming desertification and also improve the hydrological regime in those areas.

**Cross-Sectoral Issues**

1. **Decision-Making Structure:** No information available.
2. **Capacity-Building/Technology Issues:** See information provided under STATUS.
3. **Major Groups:** No information available.
4. **Finance:** No information available.
5. **Regional/International Cooperation:** See information provided under STATUS.

STATISTICAL DATA/INDICATORS

| | 1980 | 1990 | Latest 199- |
|---|---|---|---|
| Fresh water availability (total domestic/external in million $m^3$) | | | |
| Annual withdrawal of freshwater as % of available water | | | |
| Other data | | | |

**AGENDA 21 CHAPTER 19: ENVIRONMENTALLY SOUND MANAGEMENT OF TOXIC CHEMICALS, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN TOXIC AND DANGEROUS PRODUCTS**

**NATIONAL PRIORITY:**

**STATUS REPORT:**

Chemicals

The Department has streamlined much of the activities related to import of chemicals. This includes the following:

- An inter-departmental Committee has been set up by the Environment Department for controlling imports and proper management of hazardous chemicals, including radioactive materials.
- The Committee would look into fine specific areas. These are:
  - Registration of imported chemicals
  - Transportation
  - Storage Handling
  - Disposal

The requirements to be fulfilled by the importer have been derived from the UN and the International Maritime Organization.

- Industries desirous of importing chemicals are required to fill out an application form. Toxicity data, country of import and storage facilities are some of the relevant information sought. The form has been standardized and the information is fed into the computer both industry-wise and also according to the chemical name.
- Detailed rules pertaining to transport of hazardous chemicals have been framed.
- Consumption patterns by the industry and its safety record are checked before issuing a new import permit to the industry.
- Special regulations have been prepared for import and transport of radioactive materials. They are more stringent than those for hazardous chemicals. The rules cover transportation and monitoring of radiation levels.

Pesticides

A policy on pesticides has been laid down. It includes the following:

- Highly toxic pesticides, which may affect animals and human, are avoided.
- Persistent pesticides are avoided.
- Pesticides are applied under close supervision.
- Pesticides are applied at the right time to counter the disease.
- The application during flowering and ripening are avoided.
- Workers are given periodical medical examination which cover liver function and cholesterol enzyme levels.

Future and long-term plans

1) The present system of examination of import licenses needs to be further streamlined, particularly with respect to repeated applications.
2) A system of industrial inspection of storage systems for hazardous chemicals needs to be instituted. This would help in cutting down the possibility of accidents.
3) Certain chemicals are highly toxic or confirmed carcinogens. These need to be banned where safer substitutes are available.
4) The consumption rates for chemicals, particularly pesticides, need to be monitored closely so that excessive use is avoided. Also quantities of expired pesticides need to be cut down both from the wastage and disposal viewpoints.
5) Close links need to be forged with other GCC countries and UN-agencies, such as IRPTC, for exchange of information on use of toxic chemicals, precautions and their disposal methods.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** The State was conscious of the large number of chemicals required for its development linked to oil and petrochemicals. Consequently the State passed law No.4 in 1981 covering safeguards and requirements for the protection of the environment.
The Department was set up by Emiri decree in 1994. The first technical section to be set up was for management of hazardous chemicals, particularly related to the import of chemicals. Another part of the work relates to the transport of hazardous chemicals within the State. Finally, there is the issue of disposal of expired or spoiled hazardous chemicals, including waste.

2. **Capacity-Building/Technology Issues:**
- The Department lacks institutional capabilities. The number of industries and the chemicals which they import require to be more closely monitored with respect to storage and disposal. The present infrastructure does not permit this.
- Insufficient awareness on the use of pesticides.
- Generation of toxic wastes from industry should be minimized by engineering improvements and other techniques.
- Infrastructure for disposal of expired chemicals and pesticides needs to be built.

3. **Major Groups:** No information available.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** See information provided under STATUS.

**AGENDA 21 CHAPTER 20: ENVIRONMENTALLY SOUND MANAGEMENT OF HAZARDOUS WASTES, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN HAZARDOUS WASTES**

| NATIONAL PRIORITY: | |
|---|---|
| **STATUS REPORT:**<br>**The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal has been ratified in 1995.**<br><br>**Additional comments relevant to this chapter**<br><br>Please refer to the information provided under chapter 19 and chapter 41. | |

**Cross-Sectoral Issues**

1. **Decision-Making Structure:** Please refer to the information provided under chapter 19.

2. **Capacity-Building/Technology Issues:** Please refer to the information provided under chapter 19.

3. **Major Groups:** No information available.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** No information available.

**STATISTICAL DATA/INDICATORS**

| | 1980 | 1990 | Latest 199- | |
|---|---|---|---|---|
| Generation of hazardous waste (t) | | | | |
| Import of hazardous wastes (t) | | | | |
| Export of hazardous wastes (t) | | | | |
| Area of land contaminated by hazardous waste ($km^2$) | | | | |
| Expenditure on hazardous waste treatment (US$) | | | | |
| Other data | | | | |

**AGENDA 21 CHAPTER 21: ENVIRONMENTALLY SOUND MANAGEMENT OF SOLID WASTES AND SEWAGE-RELATED ISSUES**

| **NATIONAL PRIORITY:** | |
|---|---|
| **STATUS REPORT:** No information available. | |

**Cross-Sectoral Issues**

1. **Decision-Making Structure:** No information available.

2. **Capacity-Building/Technology Issues:** No information available.

3. **Major Groups:** No information available.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** No information available.

**STATISTICAL DATA/INDICATORS**

| | 1980 | 1990 | Latest 199- | |
|---|---|---|---|---|
| Generation of industrial and municipal waste (t) | | | | |
| Waste disposed(Kg/capita) | | | | |
| Expenditure on waste collection and treatment (US$) | | | | |
| Waste recycling rates (%) | | | | |
| Municipal waste disposal (Kg/capita) | | | | |
| Waste reduction rates per unit of GDP (t/year) | | | | |
| Other data | | | | |

**AGENDA 21 CHAPTER 22: SAFE AND ENVIRONMENTALLY SOUND MANAGEMENT OF RADIOACTIVE WASTES**

| NATIONAL PRIORITY: | |
|---|---|
| **STATUS REPORT:** Please refer to the information provided under chapter 19. | |

**Cross-Sectoral Issues**

1. **Decision-Making Structure:** No information available.

2. **Capacity-Building/Technology Issues:** No information available.

3. **Major Groups:** No information available.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** No information available.

**AGENDA 21 CHAPTERS 23-32: MAJOR GROUPS**

**The role of major groups are also covered under the various chapters of Agenda 21. The following is a summary of main objectives outlined in Agenda 21. Please check the appropriate boxes and describe briefly any important steps or obstacles.**

| STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS | |
|---|---|
| **Ch. 24: GLOBAL ACTION FOR WOMEN TOWARDS SUSTAINABLE AND EQUITABLE DEVELOPMENT. The Convention on the Elimination of All Forms of Discrimination Against Women has not been ratified.**<br><br>**24.a** Increasing the proportion of women decision makers.<br><br>No information available.<br><br>**24.b** assessing, reviewing, revising and implementing curricula and other educational material with a view to promoting dissemination of gender-relevant knowledge.<br>Curricula and educational material<br><br>No information available.<br><br>**24.c and 24.d** formulating and implementing policies, guidelines, strategies and plans for achievement of equality in all aspects of society including issuing a strategy by year 2000 to eliminate obstacles to full participation of women in sustainable development. Policies/strategies etc.<br><br>No information available.<br><br>**24.e** establishing mechanisms by 1995 to assess implementation and impact of development and environment policies and programmes on women<br><br>No information available.<br><br>**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):**<br><br>No information available. | |

## STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

**Ch. 25: CHILDREN AND YOUTH IN SUSTAINABLE DEVELOPMENT.**

**25.a** establishing processes that promote dialogue between the youth and government at all levels and mechanisms that permit youth access to information and opportunity to present their views on implementing A21.

No information available.

**Describe their role in the national process:**

**25.b** reducing youth unemployment

No information available.

**25.c** ensuring that by year 2000 more than 50% of youth -- gender balanced -- have access to appropriate secondary education or vocational training.

No information available.

**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):**

No information available.

## STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

**Ch. 26: RECOGNIZING AND STRENGTHENING THE ROLE OF INDIGENOUS PEOPLE AND THEIR COMMUNITIES.**

**26.a establishing a process to empower indigenous people and their communities -- through policies and legal instruments:**

No information available.

**26.b strengthening arrangements for active participation in national policies**

No information available.

**26.c involving indigenous people in resource management strategies and programmes at the national and local level.**

No information available.

**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):**

No information available.

**STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS**

**Ch. 27: STRENGTHENING THE ROLE OF NON-GOVERNMENTAL ORGANIZATIONS: PARTNERS FOR SUSTAINABLE DEVELOPMENT.**

**27.a developing mechanisms that allow NGOs to play their partnership role responsibly and effectively.**
**27.b reviewing formal procedures and mechanisms to involve NGOs in decision making and implementation.**
**27.c promoting and allowing NGOs to participate in the conception, establishment and evaluation of official mechanisms to review Agenda 21 implementation.**

No information available.

**27.d establishing a mutually productive dialogue by 1995 at the national level between NGOs and governments.**

**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):**

No information available.

**STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS**

**Ch. 28: LOCAL AUTHORITIES' INITIATIVES IN SUPPORT OF AGENDA 21.**

**28.a encouraging local authorities to implement and monitor programmes that aim to ensure participation of women and youth in local decision making.**

No information available.

**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):**

No information available.

## STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

**Ch. 29: STRENGTHENING THE ROLE OF WORKERS AND THEIR TRADE UNIONS.**

**29.a full participation of workers in implementation and evaluation of A21.**

**29.b (By year 2000, (a) promoting ratification of ILO conventions; (b) establishing bipartite and tripartite mechanism on safety, health and sustainable development; (c) increasing number of environmental collective agreements; (d) reducing occupational accidents and injuries; (e) increasing workers' education and training efforts.**

No information available.

**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):**

No information available.

**30: STRENGTHENING THE ROLE OF BUSINESS AND INDUSTRY.**

**30.a increasing the efficiency of resource use, including reuse, recycling, and reduction of waste per unit of economic output.**

**30.b encouraging the concept of stewardship in management and use of natural resources by entrepreneurs.**

**List any actions taken in this area:**

**30.c increasing number of enterprises that subscribe to and implement sustainable development policies.**

**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):**

Please refer to the information provided under Chapter 41: Combating Industrial Pollution, especially to the section on major groups.

## STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

### Ch. 31: SCIENTIFIC AND TECHNOLOGICAL COMMUNITY.

**31.a improving exchange of knowledge and concerns between s&t community and the general public. Scientific community has already established ways in which to address the general public and deal with sustainable development.**

No information available.

**31.b developing, improving and promoting international acceptance of codes of practice and guidelines related to science and technology and its role in reconciling environment and development.**

**Brief comments on this chapter not already described in chapter 35 (maximum 100 words) (please, do not exceed this page):**

No information available.

### Ch. 32: STRENGTHENING THE ROLE OF FARMERS.

**32.a promoting and encouraging sustainable farming practices and technologies.**

**32.b developing a policy framework that provides incentives and motivation among farmers for sustainable and efficient farming practices.**

**32.c enhancing participation of organizations of farmers in design and implementation of sustainable development policies.**

No information available.

**Brief comments on this chapter (maximum 100 words) (please, do not exceed this page):**

No information available.

## AGENDA 21 CHAPTER 33: FINANCIAL RESOURCES AND MECHANISMS

**Financial resources and mechanisms are also covered under each sectoral chapter of Agenda 21 where relevant. This summary highlights broader national financial policies, domestic and external (including ODA)**

**NATIONAL PRIORITY:**

**STATUS REPORT:**

Agenda 21, was agreed by the international community in Rio during UNCED in 1992. It was committed that developed countries would provide "new and additional financial resources" to help developing countries to achieve sustainable development. This was based on a political commitment by Heads of States and thus carries a moral obligation of the countries to achieve sustainable development.

**CHANGES IN NATIONAL BUDGET TO ADDRESS SUSTAINABLE DEVELOPMENT:**

No information available.

**NEW ECONOMIC INSTRUMENTS:**

No information available.

**ELIMINATION OF ENVIRONMENTALLY UNFRIENDLY SUBSIDIES:**

No information available.

**ODA policy issues**

| STATISTICAL DATA/INDICATORS | | | | | | |
|---|---|---|---|---|---|---|
| | **1992** | **1993** | **1994** | **1995** | **1996** | |
| ODA funding provided or received (Total US$million) | | | | | | |
| | **Average for 92-93** | | **Average for 94-96** | | | |
| Net flow of external capital from all sources as % of GDP | | | | | | |
| Other data | | | | | | |

## AGENDA 21 CHAPTER 34: TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY, COOPERATION AND CAPACITY-BUILDING

**Transfer of environmentally sound technology, cooperation and capacity-building is also covered under each sectoral chapter of Agenda 21 where relevant. This summary highlights broader national policies and actions relating to chapter 34.**

**NATIONAL PRIORITY:**

Qatar is at the cross-roads of economic development. Rational development and use of natural resources is the basis for any sustainable development programme. This is applicable for industrial processes and as well as in the daily consumption patterns and habits of citizens. Developed countries have already gone through the learning curve and their focus is on conservation. Primarily, the technology which would be used should be state of the art, low or no waste technology (LNWT). Large automobiles of the fifties and sixties have been replaced by highly efficient vehicles with high compression engines. The current trend is the development of automobiles on energy sources which are both renewable and also less polluting.

The requirements of Qatar in the future, therefore, are evident: selection of appropriate technology and conservation of natural resources. The implementation of environmental policies have to be done one step at a time in an economy in transition. The objective would be to have a good environment using the latest trends in science and technology. Just as the economic benefits are distributed between the State, local bodies, industry and individuals, so must the objective of sustainable development be met through the joint effort of all the entities. The formulation of policies is a function of the State and these have to be such as to promote economic and social development in order to hand down a clean environment to future generations.

**STATUS REPORT ON LINKS BETWEEN NATIONAL, REGIONAL AND INTERNATIONAL INFORMATION NETWORKS/SYSTEMS:**

**MEANS OF IMPLEMENTATION:**

- Describe any work being undertaken at the national or local level regarding efforts to promote clean production processes and/or the concepts of eco-efficiency. These processes may include training, preferential financial arrangements, information dissemination and changes in legal or regulatory frameworks.

- Provide information on the adoption of environmental management systems. National reaction to environmental management system standards such as the ISO 14000 Series and others. Please note efforts made at the national level to promote their adoption and the creation of certification infrastructure in order to facilitate access to these standards to local industry.

- List and describe programs or work under way to facilitate the transfer of ESTs to small and medium sized enterprises. Please note efforts to facilitate access to financial resources and other transfer strategies.

## AGENDA 21 CHAPTER 35: SCIENCE FOR SUSTAINABLE DEVELOPMENT

**NATIONAL PRIORITY:**

The Scientific and Applied Research Center (SARC) was set up within the University by Emiri Decree in 1980. The main purpose of the Center is for the support of scientific research and application of modern technology in the different sectors of development and economics, to keep abreast of international scientific advances. The objectives of the Center are basic research and the development of applied experiences in scientific, industrial and agricultural fields. In particular, it is to concentrate on industries already in operation in the State of Qatar and/or new industries needed for development, as well as the States natural, agricultural and animal resources. SARC is to share in the transfer of technology and its applications to Qatar and to cooperate, in particular with organizations with a mutual interest in the following fields:

1. Industry
- provide advisory services to industrial organizations
- offer expertise for feasibility studies on industrial projects

2. Agricultural and Animal Resources Research into:
- the best irrigation methods
- the best fertilization methods
- production of high-yield crops
- the constituents of desert and marine plants animal
- animal husbandry and its economics
- provide agricultural services
- carry out other agricultural projects

3. Natural Resources and Ecology
- carry out appropriate research
- draw up policy to enable the best use to be made of the resources
- preserve the ecology from pollution

4. Water
- research into Qatar's water table and into new methods of desalination
- research into the most economical ways of using water

5. Energy Resources
- research into the most economic ways of using water

6. Remote Sensing
- cooperate with other scientific centers working in the field
- carry out all possible research which is of interest to the different organizations of the State of Qatar
- take all necessary measures to yield results in possible applications

7. Databank
- Set up a data bank for the collection and storage of knowledge
- Make statistics available to authorities

| STATISTICAL DATA/INDICATORS | | | |
|---|---|---|---|
| | | Year | |
| Number of scientists, engineers and technicians engaged in research and experimental development | # | 19-- | |
| Total expenditure for research and experimental development (US$eq.) | $ | 19-- | |
| Other data | | | |

## AGENDA 21 CHAPTER 36: PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING

**NATIONAL PRIORITY:**

**STATUS REPORT:** Industrialization of Qatar has improved its standard of living. Import of technology has brought about rapid changes in lifestyles. While this has made consumer goods easily available, this has been at the cost to the environment, particularly the attendant wastages, both at the manufacturers and also at the consumers end. These include excessive consumption of plastics, metals, glass, paper and other items which are littered and ultimately find their way to the dumpsites. Awareness to these problems can certainly improve the situation. Special emphasis needs to be given in building awareness in children: the decision- makers of tomorrow.

**Increasing public awareness**

There are three routes in this mission for reaching out to the people.

- Using the resources of the Environment Department.
- Cross-linking with other organizations concerned with Environment, particularly Non-Governmental Organizations (NGOs)
- Networking with countries in common projects at the regional or international level.

Programmes taken up by Department:

There are a number of such programmes conducted annually. Each of these targets a particular segment of society. The main focus, however are the school-going children.

Awareness programmes for children:

Each year a number of competitions, on environmental topics, are organized. They include

- Painting
- Photography
- Essay

A number of exhibitions on environmental topics are held each year which include paintings, photographs and posters prepared by children. During these exhibitions, brochures and bulletins are distributed to the visitors.

Public Awareness Programmes

The following types of campaigns are held regularly:

- Cleaning important streets of empty cans and bottles.
- Protecting marine birds and turtles.
- Cleaning beaches of litter using help of NGOs, such as the Qatari Boys Scouts.

Wide publicity is given to these campaigns in order to encourage participation.

Films have also been prepared for showing to schools or on the local TV channel. The topics covered are either cartoons on civic responsibilities like keeping parks and beaches clean or on subjects of environmental relevance to Qatar, such as, marine life, coral reefs, pollution and ozone depletion.

Programmes coordinated with other agencies

The Ministry of Education and Culture is a focal point which cooperates with the Environment Department for spreading environmental awareness amongst school children. The programmes consist of the following:

- Conducting lectures for students
- Forming groups for the protection of the school environment
- Arranging competitions, such as plays, posters and bulletins.
- Running campaigns to clean beaches.
- Inclusion of environmental courses in the school curricula.

The local press helps in covering programmes related to the environment. Each month the local paper, "Al Sharq" carries a page dedicated to topical environmental issues with readers' contributions.

Radio Qatar transmits a 30-minute weekly programme giving environmental messages and news. It also conducts quizzes on important occasions, such as World Environment Day.

**NATIONAL PRIORITY:**

**STATUS REPORT (cont'd):**

Qatar Television coordinates with the Environment Department for broadcasting important functions These include the following:

- Environmental events, such as exhibitions
- Beach cleaning campaigns.
- Afforestation and tree plantations.
- Inviting distinguished persons for live discussions on environmental issues.

Qatar TV had run 72 episodes of a programme on environmental issues from 1982 to 1989. It regularly broadcasts skits, cartoons and messages to increase awareness, in both young and old.

The Council of Arab Ministries responsible for Environment (CAMRE) have established a Steering Committee for raising environmental awareness of the people in the Arab countries. The mandate covers the following:

- Studying attitudes of primary and secondary school pupils towards environment.
- Organizing meetings on environmental education, awareness and information in Arab countries.
- Furnishing all member countries of the Arab League with publications and studies issued by the different countries.
- Conducting training sessions and media gathering and organizing work groups for raising awareness.
- Holding annual meetings to follow up on the year's achievements.
- Celebrating the Arab Environment Day on 14th October of every year.

<u>The Regional Organization for the Protection of the Marine Environment (Kuwait):</u>

The Organization located in Kuwait performs the following awareness raising activities in the field of the environment:

- Supervising the execution of decisions and recommendations issued by the Council of Ministry (CAMRE).
- Holding regional meetings with the aim of developing environmental awareness.
- Presenting technical advice and financial assistance to the member states to enable them to implement environmental awareness programmes.
- Preparing and distributing the organization's bulletin, brochures, publications, audio-visual aids, reports and documents related to environmental awareness.
- Conducting specialized seminars and practical training courses in the field of pollution control.
- The organization also plans contests on children's paintings on the theme of environment protection for the member states.
- Preparing and organizing celebrations of the Gulf Environment Day which falls on the 24th of April.

<u>The Center for the Affairs of Man and the Environment:</u>

This Center, located in Riyadh, coordinates the meetings of the respective ministerial committees to bring into focus the situation in each member state in the GCC countries with respect to regional and international issues.

**Reorientation of education towards sustainable development**

The Education Ministry is responsible for all educational activities in Qatar at the primary, preparatory, secondary and tertiary levels including general, technical and religious and institutional needs. The Ministry provide facilities for literacy, adult education, cultural relations, skills training, career development, in-service teacher training. It is also responsible for public libraries, school health and school accommodation.

NATIONAL PRIORITY:

**STATUS REPORT (cont'd):**

School Education

There has been a substantial growth in the affairs of this Ministry. In 1982 there were only 141 schools. A 10-year plan was introduced in 1982 for the construction of 156 schools, of these 99 were to be built in the suburbs and desert villages.

The objective is to develop the State uniformly by spreading its resources. This would ultimately help in providing educational and other facilities throughout the State, thereby preventing urban growth. This is important for sustainable development in the context of environmental management and social upliftment. An important function within the Education Ministry is the Department of Training and Career Development. Its function is to provide training to ministerial officials, clerical and technical staff in Government and Industry. It is also responsible for providing in-service training and vocational guidance.

University System

The center for higher education is the Qatar University. This was established in 1973 and has regular courses for the Bachelors programme in Humanities, Engineering and Science. Presently there are three environment related basic courses, namely, Environmental Chemistry, Pollution and General Ecology. There is a requirement for a project in the curricula for Marine Sciences. Students are encouraged to work on one oriented to environmental management.

HH the Emir Sheikh Hamad bin Khalifa Al-Thani is the Supreme President of the University. In the convocation address in November, 1996 he emphasized "the necessity of concentrating on scientific and applied specialization" and on "the need for continuous education, which has come to take its place in the programmes and concerns and concerns of contemporary universities."

There is a need to establish a structure in the State for institutionalizing human resources development. In the background of manpower and financial constraints, the best way to do this would be to strengthen, support and integrate the existing facilities rather than build another institution. The field of human resource development in the context of sustainable development in Qatar needs to be examined at different levels of age, education and specialization.

School Curriculum and Awareness

Initial environment education has undoubtedly to begin with children in school.

It is important for the children to imbibe correct perspectives on the need to protect flora and fauna, love for the environment and principles of sustainable development. This would also help in the all-round development of their personalities. Also lessons which they learn in environmental education are carried home to the r parents. Simple messages such as planting trees to prevent deforestation and improving the microclimate are carried back to their homes with great advantage.

**Promoting training**

Technical Training

The Training and Career Development Department of the Education Ministry looks into the needs of the Government and also the Industry with regard to supply and training of personnel.

The Environment Department is in the process of setting performance standards for existing and new industries. Pollution control has already become a major focus area on the industries. Allied areas such as water conservation and environmental audit would require trained personnel to be available in the industries. Technical training would, therefore, be necessary for adopting these management techniques in industry.

**NATIONAL PRIORITY:**

**STATUS REPORT (cont'd):**

Special Programmes

These courses would essentially provide inputs for making policy decisions in their place of work. These programmes would update the management on the needs for orientation of industry to the rules and regulations which would be enforced or at least encouraged for countries to adopt. Awareness programmes related to environmental audit and the need to adopt ISO 14000 are some of the issues which industry needs to be aware of. In many cases, experts would need to be called from specialized organizations in the UN system or from consultants who are specialists in the field in which training is being imparted. In certain cases, the training could be held abroad, particularly in a GCC country to solve a common problem.

Training Center in the Environment Department

There is a pressing need for formalized training at different levels to be imparted in the State. Currently there appears to be a fragmented approach. Most of the training at the secondary and tertiary (or specialized) level is lacking and "technical training" is currently provided on the job or through contact with people or under a onetime overseas training programme. The training needs in environment must come through a cooperative manner from Government and Industry.

**Challenges**

1) Strengthen national capabilities specialized in environmental education and information.
2) Fulfil the need for organizing seminars and training sessions for the nationals in the field of environmental information.
3) Make available scientific material that addresses itself to children, using the media as an educational tool.
4) Provide access to modern communication technology to make it accessible in remote areas.
5) Train and educate female specialists in the field of environmental education to present lectures and organize training sessions for women, to clarify the role of the family in various environmental activities.

**Future and long term plans**

- Continue to celebrate 26 February which has been identified as the Qatari Environment Day.
- Establish a permanent environmental museum to house the various aspects of environment.
- Organize children's conferences on environment from 1997 onwards.
- Prepare a weekly programme on environment to be aired on TV.
- Form a network of environmental information specialists in the state of Qatar.
- Translate and publish information and printed material on environmental affairs in English.
- Produce educational films that addresses environmental issues such as natural reserves, coral reefs, etc.
- Produce educational games and computer programmes related to the environment.

| NATIONAL PRIORITY: | |
|---|---|
| **ROLE OF MAJOR GROUPS:**<br>Youth and Sports Authority (YASA)<br>There are two organizations promoted by YASA:<br>• The Center of the Friends of Environment<br>This is an NGO which promotes voluntary community work thereby acquainting the people with the features of the Qatari environment and also helps in improving community relations.<br>• The Department of Youth<br>They contribute to environmental awareness through organizing camps for cleaning beaches and tree plantation.<br><br>Qatar General Petroleum Corporation (QGPC)<br>The Environmental Affairs Department of QGPC organizes training sessions to build environmental awareness for its employees. | |

| STATISTICAL DATA/INDICATORS | | | | |
|---|---|---|---|---|
| | 1980 | 1990 | Latest 199- | |
| Adult literacy rate (%) Male | | | | |
| Adult literacy rate (%) Female | | | | |
| % of primary school children reaching grade 5 (1986-97) | | | | |
| Mean number of years of schooling | | | | |
| % of GNP spent on education | | | | |
| Females per 100 males in secondary school | | | | |
| Women per 100 men in the labour force | | | | |
| Other data | | | | |

## AGENDA 21 CHAPTER 37: NATIONAL MECHANISMS AND INTERNATIONAL COOPERATION FOR CAPACITY-BUILDING IN DEVELOPING COUNTRIES

**National capacity building is also covered under sectoral chapters.**
**Donors: You may wish to describe here how Agenda 21 has influenced your ODA policies in this area.**
**Developing countries: You may wish to describe any new national mechanisms for capacity building - and any changes in technical cooperation.**

**NATIONAL PRIORITY:**

**STATUS REPORT ON NATIONAL ENDOGENOUS CAPACITY BUILDING:**

Training of Technicians and Craftsmen

With the rapid industrialization of the State, there has arisen the pressing need for trained craftsmen and technicians capable of handling technical work in industry and in Government. This need is being filled by the Training and Career Development Department and Regional Training Center of the Ministry of Education.

The functions of the Department are as follows:

- To train professional and technical Qatari employees and other employees appointed as supervisors sufficiently to entitle them to replace foreign employees, in cooperation with the Department of Administrative Affairs and the Departments to which these employees relate.
- To make trade and written tests for the candidates to replace foreign employees or to fill vacancies in cooperation with the Departments concerned.
- To propose sending Qatari employees on short training courses to qualify them and to raise their job standard, in consultation with other Departments in which there is an urgent need for such courses .
- To appoint Qataris who are nominated for employment by the authorities of Government.
- The Department presently has 18 sections to cover the important specializations, mainly, electronics, electrical & mechanical engineering, chemical laboratory, survey and technical drawing.

There are two concurrent schemes in this Department: one is for freshers, to learn a technical trade and another for in-service training. Presently there are about 250 persons in each of the two categories. The courses for learning a trade lasts for two year and a half is spent in the Department and the remaining six months are in a commercial or industrial establishment for on-the-job training. There are several modules for in-service trainees for period up to 4 months.

## AGENDA 21 CHAPTER 38: INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

**Ch. 38: Brief summary of any particular UN System response affecting this country/state:**

No additional information available.

## AGENDA 21 CHAPTER 39: INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

**Ch. 39: International Legal Instruments are covered under the relevant sectoral chapters. This is a listing of major agreements/conventions (not already covered) entered into and relevant to Agenda 21:**

No additional information available.

## AGENDA 21 CHAPTER 40: INFORMATION FOR DECISION-MAKING

This chapter is also covered under sectoral and other chapters of this profile. The matrix below gives an overview of how national authorities rate the available information for decision making.

Rating of available data and information suitable for decision-making

| Agenda 21 Chapters | | Very good | Good | Some good data but many gaps | Poor | Remarks |
|---|---|---|---|---|---|---|
| 2. | International cooperation and trade | | | | | |
| 3. | Combating poverty | | | | | |
| 4. | Changing consumption patterns | | | | | |
| 5. | Demographic dynamics and sustainability | | | | | |
| 6. | Human health | | | | | |
| 7. | Human settlements | | | | | |
| 8. | Integrating E & D in decision-making | | | | | |
| 9. | Protection of the atmosphere | | | | | |
| 10. | Integrated planning and management of land resources | | | | | |
| 11. | Combating deforestation | | | | | |
| 12. | Combating desertification and drought | | | | | |
| 13. | Sustainable mountain development | | | | | |
| 14. | Sustainable agriculture and rural development | | | | | |
| 15. | Conservation of biological diversity | | | | | |
| 16. | Biotechnology | | | | | |
| 17. | Oceans, seas, coastal areas and their living resources | | | | | |
| 18. | Freshwater resources | | | | | |
| 19. | Toxic chemicals | | | | | |
| 20. | Hazardous wastes | | | | | |
| 21. | Solid wastes | | | | | |
| 22. | Radioactive wastes | | | | | |
| 24. | Women in sustainable development | | | | | |
| 25. | Children and youth | | | | | |
| 26. | Indigenous people | | | | | |
| 27. | Non-governmental organizations | | | | | |
| 28. | Local authorities | | | | | |
| 29. | Workers and trade unions | | | | | |
| 30. | Business and industry | | | | | |
| 31. | Scientific and technological community | | | | | |
| 32. | Farmers | | | | | |
| 33. | Financial resources and mechanisms | | | | | |
| 34. | Technology, cooperation and capacity-building | | | | | |
| 35. | Science for sustainable development | | | | | |
| 36. | Education, public awareness and training | | | | | |
| 37. | International cooperation for capacity-building | | | | | |
| 38. | International institutional arrangements | | | | | |
| 39. | International legal instruments | | | | | |
| 40. | Information for decision-making | | | | | |

**Additional Comments**

No information available.

**STATISTICAL DATA/INDICATORS**

| | 1980 | 1993 | Latest 199- |
|---|---|---|---|
| Number of telephones in use per 100 inhabitants | | | |
| Other data | | | |

## CHAPTER 41: COMBATING INDUSTRIAL POLLUTION

**NATIONAL PRIORITY:**

**STATUS REPORT:** The availability of raw materials, a cheap labor force, and an increased demand for oil/gas derived products have led to the diversification of the industrial sector in the 1970's. These years saw the establishment of petrochemical, fertilizer, iron & steel, cement and gas liquefaction plants. Although it was obvious at that time that these industries may result in the generation of water and air pollutants, solid and hazardous wastes, their environmental impacts were not fully considered . The philosophy was one of producing more products with lesser concern to pollution. The steps taken to implement the commitments for sustainable development made in the Earth Summit, 1992 and the future plans for achieving a cleaner industrial production are discussed.

**Steps taken towards combating industrial pollution**

Environment Department's Activities: It has been recognized that combating industrial pollution requires the establishment of a government institution to spearhead, coordinate and implement the government policies as regards to environmental protection from the ills of industrial pollution. To discharge that responsibility,1994 saw the creation of the Environment Department within the Ministry of Municipal Affairs and Agriculture. The main functions of the Department have been stipulated in Law 20 of 1993. Among the duties and the mandated functions of the Department are the following:

Develop and implement plans to protect the environment.
Establish principles for determining impacts on the environment.
Monitor and document pollution episodes.
Develop and set up emergency response plans.
Implement measures to mitigate pollution impacts.
Conduct studies on the effects of pollutants and ways of minimizing these impacts.
Evaluate and approve (or withhold approval) of environmental impact assessment studies conducted in support of government or private projects.
Submit quarterly reports to the Environment Protection Committee.
Provide technical staff trained in the fields of environmental monitoring and pollution prevention.
Enforce environmental laws, standards and criteria.
Collect data on the state of the environment.
Supervise and control the import, transport, disposal and storage of dangerous chemicals. Implement environmental public awareness programs.

To discharge the above duties the Department has been involved in many programs. The following is a summary of the Environment Department's activities:

1. A Geographic Information System database of the local industries has been created. The database features the pollution point sources and associated pollution louds.
2. Specifications for air quality monitoring stations have been prepared and are awaiting approval. These stations will be fixed at strategic sites to represent the impacts of the traffic movement and industrial installations. This will help assess the quality of air in the country.
3. An environmental protection legislation is in circulation and may be promulgated in the near future.
4. A survey of the marine environment for heavy metals and hydrocarbons at selected sites in the coastal areas is being carried out by the Department in collaboration with the Marine Science Department of the University of Qatar.
5. A national report on Ozone Depleting Substances has been prepared. The national consumption of these substances is determined to be below 0.3 kg/ca/year and, thus Qatar is assessed to be an "Article Five country".
6. Environmental impact assessment procedures are being set and this will be succeeded by a ministerial decree to be effective and applicable to all concerned projects .
7. A waste management legislation for the transboundary movement of hazardous wastes has been prepared. This is required by the Basel Convention which Qatar has ratified.

**STATUS REPORT (cont'd):**

Future and long-term plans

1. Divide industries into prescribed and non-prescribed processes depending on their size and the quantity of emissions and discharges that they can produce, if operated uncontrolled. The operators of prescribed process would then be required to eliminate or render harmless the substances that may cause pollution to the environment whether that is to air, water or land. To discharge this requirement, these installations would be required to have a "permit" to operate. This will serve as a compliance enforcing mechanism. Non-prescribed processes which are mainly of light industry type will be given guidance to reduce the environmental impacts by following strict codes of practices and guidelines.
2. Prepare lists of potentially polluting industries that should operate with a permit.
3. Install air quality monitoring stations in urban and industrial areas.
4. Prepare industrial zoning guidelines to make use of the diluting capacity of the atmosphere.
5. Prepare plans for water management policy, e.g. sharing of a common industrial waste treatment plant when clusters of industrial facilities are located.
6. Promote clean technologies by establishing a link to international databases, and encouraging local colleges and universities to conduct research and development projects. In relation to environmental issues specific to the nation's industries and ecosystems.
7. Promote the creation of green belts in and around industrial facilities.
8. Require industry to periodically report its self-monitoring activities to the environment department.
9. Mandate waste minimization audits to be conducted by the existing prescribed industries to help identify the best possible ways and methods to maximize resource usage and reduce discharge of pollutants to the environmental media.
10. Institutionalize the requirement of operating permits.
11. Mandate environmental status report to be included in the annual report of all companies.
12. Prepare guidelines and codes of practice for light industries.
13. Collaborate and induce other government institutions to build the required infrastructure such as engineered landfills, wastewater treatment works, etc.

## Cross-Sectoral Issues

1. **Decision-Making Structure:** Please refer to the information provided under STATUS.

2. **Capacity-Building/Technology Issues:** Challenges: lack of strong institutional capability of the environment department, due to its recent formation and resources. The Environment Department is in its infancy and is building up its institutional capabilities. Lack of national infrastructure for the treatment and disposal of industrial wastes. Insufficient awareness of the environmental effects of the production processes.

3. **Major Groups:** Industrial Sector Activities: The majority of the local industries are becoming aware of the need to protect the environment. The efforts exerted in this regard vary in degree and intensity from one company to another. The industrial sector activities can be summarized as following:
Some of the companies are adopting management systems and environmental policies of continual improvement. Some of these management systems are based on the International Environmental Rating System. The ultimate aim of these efforts is to obtain ISO certification.
An Environmental Technical Committee comprising all the major industrial companies and the Environment Department has been formed. The main objective of the Committee is to provide a discussion forum for the evaluation of the environmental protection legislation and attendant regulations. Most companies are keen to participate and collaborate with the regulatory authorities.
Environmental impact assessment studies are being conducted for all new major industrial installations since 1992.
Most companies are taking the responsibility of providing employee training programs on environmental issues. Some have already implemented in-house training sessions for their line management and are planning to take it down to the lower levels of their operational hierarchy.
All major companies have formed environmental protection sections or departments to look after and assess the environmental impacts of their operations.

4. **Finance:** No information available.

5. **Regional/International Cooperation:** No information available.